

REMARKS

This Amendment, submitted in reply to the Office Action dated September 20, 2006, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

Claims 1-39 are pending in the present application.

I. Specification

The amendment filed October 4, 2005 is objected to under 35 U.S.C. 132(a) because the Examiner asserts it introduces new matter into the disclosure. In particular, the Examiner asserts that 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The Examiner asserts that the newly added material on pages 2-3 of the amendments to the specification is not supported by the *original* disclosure.

Claim 7 as originally filed recites “wherein each stationary grid to be used is subjected to said reducing step.”

Applicant submits that the specification was merely amended to more literally describe the subject matter of claims 7 and 17 as *originally* filed. Therefore, the subject matter of the disclosure (including the claims) supports the specification modification.

Further, if an applicant amends or attempts to amend the abstract, specification or drawings of an application, an issue of new matter will arise if the content of the amendment is not described in the application as filed. Stated another way, information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter. MPEP 2163.06. As previously submitted, the subject matter added to the specification was merely added to more literally

describe the subject matter of claims 7 and 17 which is supported in the claims as originally filed, as discussed below.

In addition, Applicant submits a description of the claimed subject matter can also be found in Japanese Patent Application Nos. 2000-011174 and 2000-395577, which were incorporated by reference, as indicated on page 46 of the specification as originally filed.

For at least the above reasons, Applicant requests that the objection to the specification be withdrawn.

II. Rejection of claims 7, 17, and 38-39 under 35 U.S.C. § 112

Claims 7, 17, and 38-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The Examiner asserts that the recitation "wherein said reduction comprises reducing a spatial frequency component corresponding to a grid array frequency of each possible stationary grid that may be used" of claim 7 is not sufficiently described in the Applicant's specification.

Applicant refers the Examiner to, for example, the first full paragraph on page 6 and the paragraph bridging pages 6 and 7 of the Specification as originally filed, which recites:

The expression "reducing a transformed image signal of the transformed image signals which has a desired frequency range containing a spatial frequency component corresponding to at least a grid array frequency of the stationary grid" means to apply a process for suppressing both a spatial frequency component corresponding to the grid frequency and a spatial frequency component near the grid frequency, and does not mean to suppress almost all high frequency components greater than a spatial frequency component corresponding to the grid frequency, as in the conventional method. That is, in the present invention, as fast as it is possible, high frequency components (e.g., a spatial frequency component corresponding to a Nyquist frequency and spatial frequency components near the Nyquist

frequency) greater than a spatial frequency component corresponding to the grid frequency are not suppressed.

The expression "in only the vicinity of a grid array direction of the stationary grid" means to apply the suppressing process in the grid array direction of the stationary grid or the neighboring directions, and means not to apply the suppressing process in the directions other than that, unlike applying the suppressing process independently of the grid direction, as in the conventional method. The "stationary grid" used herein, as described later, may be a stationary grid which is actually used, or a stationary grid, differing in grid direction, which is to be used."

Further, as described on page 7, lines 7-10 of the specification as originally filed, the angle of the grid array direction of the stationary grid that may be possibly used in photography does not include all kinds of angles (360 degrees), but is limited to a number of kinds of angles, such as an angle in the vertical direction and an angle in the horizontal direction. Further, a grid that has the limited number of kinds of angles is used in actual photography. In this respect, each of the limited number of kinds of angles corresponds to "each stationary grid to be used" that is, "each possible stationary grid that may be used" in the claims and in the specification of the present application.

Further, one of the limited number of kinds of angles, that is actually used in photography, corresponds to the "stationary grid which is actually used" in the claims and the specification of the present application.

For example, if the "each possible stationary grid that may be used" is a horizontal grid and a vertical grid, the reduction step as recited in for example, claims 7, 17, 38 and 39 comprise the steps as described on for example, page 7, lines 10-13 and 15-25:

reducing a transformed image signal of said transformed image signals which has a desired frequency range containing a spatial frequency component corresponding to at least a grid array frequency of horizontal stationary grid in only the vicinity of the grid array direction of the horizontal stationary grid; and

reducing a transformed image signal of said transformed image signals which has a desired frequency range containing a spatial frequency component corresponding to at least a grid array frequency of vertical stationary grid in only the vicinity of the grid array direction of the vertical stationary grid.

For further clarification, Applicant submits an Appendix illustrating the grid array direction of a horizontal stationary grid (See Fig. A in the Appendix) and the grid array direction of a vertical stationary grid (See Fig. B in the Appendix).

Specifically, as described on page 7, lines 14-15 of the specification as originally filed, the reduction step as recited in, for example, claims 7, 17, 38 and 39 comprises a step for reducing a transformed image signal of the transformed image signals which has a desired frequency range containing a spatial frequency component corresponding to at least the grid array frequency of each possible stationary grid that may be used in only the vicinity of the grid array direction of the stationary grid. In the present invention, since both the reduction step with respect to the horizontal direction and the reduction step with respect to the vertical direction are performed, it is possible to reduce an image signal that has a desired frequency range containing a spatial frequency component corresponding to at least the grid array frequency of the stationary grid in only the vicinity of the grid array direction of "a stationary grid that is actually used" which is one of the "possible stationary grids that may be used".

As stated above, the process for reducing the frequency components corresponding to the plurality of stationary grids (each possible stationary grid that may be used) is supported by the description in the specification of the present application as originally filed. More specifically, the process for reducing the frequency components corresponding to the plurality of stationary grids is described as the process for reducing components corresponding to two (a plurality of) stationary grids, namely, a horizontal grid and a vertical grid (page 7, lines 10-13 and lines 15-25 in the specification of the present application). Therefore, the amendments to claims 7, 17, 38 and 39 are fully supported by the descriptions in the specification of the application as originally filed.

In view of the foregoing, Applicant submits that the subject matter of claim 7 was disclosed in the specification, therefore the 35 U.S.C. § 112, first paragraph rejection of claim 7 should be withdrawn. To the extent claims 17 and 38-39 recite similar subject matter, claims 17 and 38-39 should be deemed allowable for at least the same reasons.

III. Rejection of claims 1, 2, 11, 12, 21, 24, 27, 28, and 31 under 35 U.S.C. § 103

Claims 1, 2, 11, 12, 21, 24, 27, 28, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ohta (U.S. Patent No. 5,173,788) and Yazici et al., (U.S. Patent No. 6,333,990).

Claim 1

The Examiner concedes that Ohta does not disclose "reducing a transformed image signal of said transformed image signals which has a desired frequency range containing a spatial frequency component corresponding to at least a frequency of said periodic pattern in only the vicinity of an array direction of said periodic pattern, not reducing any of said transformed image

signals in a different direction from said vicinity of said array direction of said periodic pattern” and cites Yazici to cure the deficiency.

As previously submitted, the combination of Yazici with Ohta is not obvious. In particular, Ohta is directed to a device which depresses moiré components of an image. In order to remove the moiré, a high frequency component of an image is compared with two predetermined threshold levels to obtain first and second moiré coordinates and components. See col. 4, lines 20-64. Calculations are then performed on selected moiré components the values. The calculated values are input to a composite circuit which combines the low frequency image data with the high frequency corrected frequency image data to obtain the whole corrected frequency image data. See col. 5, lines 5-16. Therefore, Ohta is not at all concerned with reducing a transformed image signal in only the vicinity of an array direction of a periodic pattern. Consequently, modifying Ohta to include the teachings of Yazici would result in a substantial modification of the principle of operation of Ohta, evidencing that the Examiner’s reasoning is merely a result of impermissible hindsight. MPEP 2143.01.

The Examiner asserts, in response to the Applicant’s arguments, that although Ohta may not be concerned with reducing a transformed image signal in only the vicinity of an array direction of a periodic pattern, Ohta is concerned with reducing a transformed image signal of a periodic pattern and improving the accuracy of the pattern suppression method, citing col. 8, lines 56-59 in support. However, the respective column and lines cited by the Examiner discloses depressing moiré without reducing resolution and blurring an output image, thus an image having no moiré can be produced even when a dot-printed original image is picked up. Therefore, contrary to the Examiner’s assertion, Ohta is merely concerned with the depression of moiré

components. At no point would Ohta desire to reduce a transformed image signal in only a vicinity of an array direction of a periodic pattern, as claimed.

Ohta discloses moiré depression. The moiré depression of Ohta is performed through a comparison of high frequency value of an image with threshold values and a calculation is performed. There is absolutely no teaching or suggestion of reducing a transformed image signal of a periodic pattern as claimed. Therefore, contrary to the Examiner's assertion, this would result in a substantial modification because at no point does Ohta reduce a transformed image signal in only a vicinity of an array direction of a periodic pattern, as claimed.

For further example, claim 1 of Ohta recites:

"An image reading device for reading an original image, comprising:

image pickup means for optically picking up the original image and electrically converting into two-dimensional positional image data represented in a two-dimensional positional coordinate system;

transforming means for converting the two-dimensional positional image data into two-dimensional spatial frequency image data represented in a two-dimensional spatial frequency coordinate system;

separating means for separating the two-dimensional spatial frequency image data into high frequency image data and low frequency image data;

image data correcting means for depressing moire components of the high frequency image data to correct the high frequency image data;

composite means for combining the low frequency image data and the corrected high frequency image data to thereby obtain the corrected two-dimensional frequency image data;

retransforming means for reconverting the corrected two-dimensional frequency image data into corrected two-dimensional positional image data; and

outputting means for outputting the corrected two-dimensional positional image data to reproduce the original image with depressing moiré."

Therefore, it is evident that the moiré depression performed in Ohta is not at all concerned with reducing a transformed image signal of said transformed image signals which has a desired frequency range containing a spatial frequency component corresponding to at least a frequency of said periodic pattern in only the vicinity of an array direction of said periodic pattern, not reducing any of said transformed image signals in a different direction from said vicinity of said array direction of said periodic pattern, and then transforming said transformed image signals into an inverse-transformed signal in said real space domain, as claimed. The Examiner's reasoning to modify Ohta to include the teachings of Yacizi is clearly a result of impermissible hindsight upon viewing the Applicant's invention.

The Examiner's suggestion to modify the operation of Ohta, which does not perform reducing a transformed image signal of said transformed image signals which has a desired frequency range containing a spatial frequency component corresponding to at least a frequency of said periodic pattern in only the vicinity of an array direction of said periodic pattern, is purely based on hindsight upon viewing the Applicant's invention. The primary purpose of Ohta is moiré depression. Ohta is not at all concerned with the suppression of a periodic pattern as claimed. Therefore, the Examiner's suggestion for modification would be unnecessary to the moiré depression performed in Ohta evidencing that the Examiner's motivation for the combination is improper. MPEP 2143.06(VI) ("The court reversed the rejection holding the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under

which the [primary reference] construction was designed to operate.” *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).)

For at least the above reasons, claim 1 and its dependent claims should be deemed allowable. To the extent independent claims 2, 11, 12, 21 and 24 recites similar elements, claims 2, 11, 12, 21 and 24 and their dependent claims should be deemed allowable for similar reasons.

Claim 2

Claim 2 recites “reducing a transformed image signal of said transformed image signals which has a desired frequency range containing a spatial frequency component corresponding to at least a grid array frequency of said stationary grid, which is actually used, in only the vicinity of a grid array direction of said stationary grid, not reducing any of said transformed image signals in a different direction from said vicinity of said array direction of said periodic pattern.” The Examiner concedes that Ohta does not teach this aspect of the claim and cites Yazici to cure the deficiency.

However, as indicated by the Examiner, Ohta is not at all concerned with a stationary grid. As discussed above, Ohta depresses moiré components of an image according to calculations with respect to threshold values. Ohta is not concerned with reducing a transformed image signal having a frequency range containing a spatial frequency component corresponding to at least a grid array frequency of said stationary grid as recited in claim 2. Therefore, any suggestion by the Examiner that adding further components to Ohta, such as a stationary grid, is obvious, would clearly be a result of impermissible hindsight.

Consequently, claim 2 and its dependent claims should be deemed allowable. To the extent independent claims 12, 21 and 24 recites similar elements, claims 12, 21 and 24 and their dependent claims should be deemed allowable for similar reasons.

IV. Rejection of claims 22-23 and 25-26 under 35 U.S.C. § 103

Claims 22-23 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ohta, Yazici and Hara (U.S. Patent No. 6,173,086). Claims 22-23 and 25-26 should be deemed allowable by virtue of their dependency to claims 2 and 24 for the reasons set forth above. Moreover, Hara does not cure the deficiencies of Ohta and Yacizi.

V. Rejection of claims 29-30, 33, and 35 under 35 U.S.C. § 103

Claims 29-30, 33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ohta, Yazici, and Barski et al., (U.S. Patent No. 6,269,176). Claims 29-30, 33, and 35 should be deemed allowable by virtue of their dependency to claims 2 and 12 for the reasons set forth above. Moreover, Barski does not cure the deficiencies of Ohta and Yacizi.

VI. New Claims

Applicant has added claims 40-43 to provide a more varied scope of protection. Claims 40-43 should be deemed allowable by virtue of their dependency to claims 2 and 12 for at least the reasons set forth above. Moreover, the art cited by the Examiner does not teach the elements of claims 40-43.

VII. Allowable Subject Matter

Claims 3-6, 8-10 13-16, 18-20, 32, 34, 36, and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. At the present time, Applicant has not

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rewritten claims 3-6, 8-10 13-16, 18-20, 32, 34, 36, and 37 in independent form since Applicant believes claims 3-6, 8-10 13-16, 18-20, 32, 34, 36, and 37 will be deemed allowable, without amendment, by virtue of their dependency to claims 1, 2, 11 and 12 for at least the reasons set forth above.

VIII. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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